

# THE NUMBER OF FEATHERS IN SOME BIRDS<sup>1</sup>

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Information on the number of feathers in various species of birds is scarce, the most extensive work being that of Wetmore (1936), who investigated 73 species of passerine birds and six representatives of four other orders. Four additional species were reported by Dwight (1900), Knappen (1932), and Ammann (1937). In all 83 species, representative of six orders, have been studied. In the present paper counts of 16 species are given, raising the overall total of species to 94 and the number of orders to eleven.

The feathers were removed individually with forceps, counted, and discarded. The smaller ones were counted under a dissecting microscope. Since counting is very tedious work, a tally of each hundred feathers or less was kept. Counts on an individual bird were made at intervals over a period of several days, to mitigate fatigue and consequent error.

Unless otherwise specified, only the contour feathers were counted. In cases of doubt as to the type of feather magnification was used. Since my birds were under refrigeration for some time, during which significant weight losses may have occurred, data on the weights of the bird and its plumage were not obtained. Rough calculations, however, indicate that in many species the weight of the feathers exceeds that of the skeleton.

In further work of this type it would be desirable to record the feather number by pterylae. When I first began counting no record of the distribution of feathers was made. On later counts I divided the body into regions, but these included parts or all of several pterylae.

The number of feathers in relation to body size has been used to derive formulae relevant to the temperature control mechanism (Hutt and Ball, 1938). Before such formulae can have much meaning, however, several other factors need to be investigated, such as the weight of the feathers, the texture of the feathers (whether lax or compact), the presence or absence of bare areas of skin, the occurrence and size of aftershafts, and especially the density of the downy under layer.

Little is known about the variation in the number of feathers among individuals in the same species. Wetmore recorded 1119-

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2973 contour feathers among members of the Passeriformes. In this same order 3138-4342 contour feathers were reported by Dwight, by Ammann, and by Staebler (1941). My counts in this order, 3183-4607, are in close agreement with those of the latter group of authors. My counts of non-passerine species are also substantially higher than Wetmore's figures for non-passerines.

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#### COLYMBIDAE

*Podilymbus podiceps podiceps*. Pied-billed Grebe. Female. Collected December 30, 1948, 12 miles southeast of Bronson, Levy County, Florida. Total contour feathers 15,016. These were distributed as follows: head and neck 7912, body and legs 5412, left wing 779, right wing 913.

#### ARDEIDAE

*Ixobrychus exilis exilis*. Least Bittern. Male. Collected May 20, 1949, at Payne's Prairie, Alachua County, Florida. Total contour feathers 3867; total powder downs 846. The powder downs were distributed as follows: left pectoral 206, right pectoral 192, left femoral 235, right femoral 213. I also counted 256 filoplumes, but this figure does not represent the total number of that type.

#### ANATIDAE

*Anas crecca carolinensis*. Green-winged Teal. Female. Collected January 28, 1949, at Sheepshead Creek, Levy County, Florida. Total contour feathers 11,450. These were distributed as follows: head 4832, neck 2226, body 1690, oil gland 22, tail 378, left leg 160, right leg 152, left wing 976, right wing 1014.

*Anas acuta tzitzihoa*. Pintail. Male, nearly adult. Collected January 28, 1949, at Sheepshead Creek, Florida. Total contour feathers 14,914, distributed as follows: 10,492 on head and neck, 2701 on legs and body, 1721 on wings. On the rump there were found 52 semiplumes; no others were seen in other regions. I also pulled off incidentally and counted 379 downs, but this figure was only a small fraction of the total. I estimate that the number of downs on a duck approximates the number of contour feathers.

Two other species in this family have been counted. Knappen (1932) recorded 11,903 in a mallard (*Anas platyrhynchos*), and

Ammann (1937) reported 25,216 on a whistling swan (*Cygnus columbianus*).

#### RALLIDAE

*Rallus longirostris scotti*. Florida Clapper Rail. Female. Collected April 30, 1949, at Cedar Key, Levy County, Florida. Total contour feathers 7224, distributed as follows: 3956 on head and neck, body and legs 2233, left wing 515, right wing 520.

*Fulica americana americana*. American Coot. Female. Collected November 16, 1949, at Welaka, Putnam County, Florida. Total contour feathers 13,913. They were distributed as follows: head 4989, neck 2899, left wing 723, right wing 720, body and legs 4551, rectrices 14, oil gland 17.

#### SCOLOPACIDAE

*Erolia minutilla*. Least Sandpiper. Female. Collected April 30, 1949, at Cedar Key, Florida. Total contour feathers 4480.

#### STRIGIDAE

*Otus asio asio*. Southern Screech Owl. Male. Collected February 18, 1949, two miles north of Gainesville, Alachua County, Florida. Total contour feathers 6458, distributed as follows: head 2345, neck 340, body 896, left wing 763, right wing 818, left leg 659, right leg 637.

*Strix varia georgica*. Florida Barred Owl. Male. Collected June 24, 1949, at Gulf Hammock, Levy County, Florida. Total contour feathers 9206. This specimen had a great many pin-feathers. The screech owl which I counted, however, had very little down and still fewer semiplumes, so the barred owl figure is believed to be fairly accurate.

#### CAPRIMULGIDAE

*Chordeiles minor minor*. Eastern Nighthawk. Female. Collected April 30, 1949, at Cedar Key, Florida. Total contour feathers 3332, distributed as follows: head and neck 1252, legs and body 1115, left wing 445, right wing 520. Wetmore (1936:166) reported 2034 and 2265 contour feathers in two specimens of this race.

#### TROCHILIDAE

*Archilochus colubris*. Ruby-throated Hummingbird. Female. Collected May 15, 1949, at Gainesville, Florida. Total contour feathers 1518, distributed as follows: head 381, neck 162, body and legs 684, left wing 143, right wing 148. Wetmore (loc. cit) reported 940 feathers in a male of this species.

## PICIDAE

*Centurus carolinus carolinus*. Carolina Red-bellied Woodpecker. Male. Collected April 24, 1949, at Santa Fe River, near High Springs, Alachua County, Florida. Total contour feathers 3665, distributed as follows: head 1557, neck 253, body and legs 1034, left wing 456, right wing 365.

## CORVIDAE

*Cyanocitta cristata cristata*. Southern Blue Jay. Juvenile female. Collected July 25, 1949, at Gainesville, Florida. Total contour feathers 3773. Wetmore (loc. cit.) reported 1898 feathers in a male of the northern blue jay (*Cyanocitta cristata bromia*).

## MIMIDAE

*Mimus polyglottos polyglottos*. Eastern Mockingbird. Male. Collected March 18, 1949, at Gainesville, Florida. Total contour feathers 3297. The downs were estimated at several hundred. Wetmore (op. cit.: 167) reported 1601 feathers in a female of this subspecies.

*Toxostoma rufum rufum*. Eastern Brown Thrasher. Juvenile female, full grown. Collected July 9, 1949, in Escambia County, Florida. Total contour feathers 3379. Wetmore (loc. cit.) reported 1960 feathers in a male of this form.

## ICTERIDAE

*Sturnella magna argutula*. Southern Meadowlark. Male. Collected February 15, 1949, two miles south of Kenansville, Osceola County, Florida. Total contour feathers 4607.

## FRINGILLIDAE

*Richmondena cardinalis floridana*. Florida Cardinal. Female. Collected July 26, 1949, at Gainesville, Florida. Total contour feathers 3183. Wetmore (loc. cit.) reported 2280 feathers in a male of the eastern race, *Richmondena cardinalis cardinalis*.

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